

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An imaging head unit comprising a plurality of imaging heads arranged along a direction intersecting a predetermined scanning direction, the imaging heads moving relative to a respective imaging surface in the scanning direction along the imaging surface,

wherein pixel update timings of the imaging heads are alterable in at least the scanning direction for the individual ~~the~~ imaging heads.

2. (original): The imaging head unit of claim 1, wherein each imaging head comprises a plurality of imaging elements and the alteration of a pixel update timing is implemented by altering an imaging timing by a duration which is determined by a ratio between a spacing error of an imaging element in the scanning direction and a scanning speed.

3. (original): The imaging head unit of claim 2, wherein the alteration of the imaging timing is implemented by retarding the imaging timing.

4. (original): The imaging head unit of claim 2, wherein the alteration of the imaging timing is implemented by advancing the imaging timing.

5. (original): The imaging head unit of claim 1, wherein each imaging head comprises a plurality of imaging elements which are two-dimensionally arranged in a plane which is substantially parallel to the imaging surface, and the imaging head is rotatable about a line perpendicular to the imaging surface.

6. (original): The imaging head unit of claim 1, wherein a scanning speed in the scanning direction is alterable.

7. (original): The imaging head unit of claim 1, wherein each imaging head comprises a modulated light irradiation apparatus which irradiates light, which is modulated at each of pixels in accordance with image information, at an exposure surface which includes the scanning surface.

8. (original): The imaging head unit of claim 7, wherein the modulated light irradiation apparatus comprises:

- a laser device which irradiates laser light;
- a spatial light modulation element at which numerous imaging element portions, which respectively alter light modulation states in accordance with control signals, are arranged in a two-dimensional arrangement, the spatial light modulation element modulating the laser light irradiated from the laser device; and
- a control section which controls the imaging element portions by the control signals, which are generated in accordance with the image information.

9. (original): The imaging head unit of claim 8, wherein the spatial light modulation element comprises a micromirror device which includes numerous micromirrors arranged in a two-dimensional arrangement, angles of reflection surfaces of which micromirrors are respectively alterable in accordance with the control signals.

10. (original): The imaging head unit of claim 8, wherein the spatial light modulation element comprises a liquid crystal shutter array which includes numerous liquid crystal cells arranged in a two-dimensional arrangement, which are respectively capable of blocking transmitted light in accordance with the control signals.

11. (currently amended): An imaging device comprising:
an imaging head unit including a plurality of imaging heads arranged along a direction intersecting a predetermined scanning direction, the imaging heads moving relative to a respective imaging surface in the scanning direction along the imaging surface, and pixel update timings of the imaging heads being alterable in at least the scanning direction for the individual imaging heads; and
a movement apparatus which relatively moves the imaging head unit in the predetermined scanning direction.

12. (currently amended): An imaging method which employs the imaging head unit of claim 1, comprising:
relatively moving an imaging unit, which includes the imaging head unit, along the imaging surface in the predetermined scanning direction for imaging;

altering pixel update timings for the individual ~~the~~-imaging heads in accordance with a scale factor difference; and

implementing a conversion of an imaging scale factor in at least the scanning direction.

13. (currently amended): An imaging method which employs an imaging head unit, the method comprising the steps of:

relatively moving an imaging unit, which includes the imaging head unit, along the imaging surface in ~~the~~a predetermined scanning direction for imaging;

altering pixel update timings for individual ~~the~~-imaging heads in accordance with a scale factor difference; and

implementing a conversion of an imaging scale factor in at least the scanning direction.

14. (new): The imaging head unit of claim 1, wherein the pixel update timings are timings at which the imaging heads are updated with image data from a memory of the imaging head unit.

15. (new): The imaging device of claim 11, wherein the pixel update timings are timings at which the imaging heads are updated with image data from a memory of the imaging head unit.

16. (new): The imaging method of claim 13, wherein the pixel update timings are timings at which the imaging heads are updated with image data from a memory of the imaging head unit, wherein the updated image data is irradiated onto the imaging surface after the imaging heads are updated at an altered pixel update timing.

17. (new): The imaging head unit of claim 2, wherein the ratio is given by

$$\alpha = y' / y; \text{ wherein}$$

$$y = v \cdot \Delta t \times n, \text{ and}$$

$$y' = v \cdot \Delta t' \times n;$$

wherein α represents the ratio, y represents a first scanning position of the exposure heads before the imaging timing is altered at an n -th update time, n being a natural number, and y' represents a scanning position of the imaging heads after the imaging time is altered at the n -th update time, where v is the scanning speed, Δt is a first update interval before altering the pixel update timing of the imaging heads, and $\Delta t'$ is a second update interval after altering the pixel update timing of the imaging heads.

18. (new): The imaging head unit of claim 17, wherein

$$\Delta t' = \alpha \cdot \Delta t; \text{ and}$$

the ratio α is in a range that is not less than 0.95 and not more than 1.05.

19. (new): The imaging method of claim 13, wherein the imaging head unit includes a plurality of individual heads, and the scale factor difference is determined when the plurality of

the individual imaging heads are lined up to form the imaging head unit, and a difference in scaling between the individual imaging heads occurs.

20. (new): The imaging method of claim 19, wherein the implementing the conversion of the imaging scale factor eliminates the scale factor difference.

21. (new): The imaging method of claim 13, wherein the implementing the conversion of the imaging scale factor is based on a ratio between a spacing error of the individual imaging heads in the scanning direction and a scanning speed of the imaging unit.

22. (new): The imaging method of claim 21, wherein the ratio is given by

$$\alpha = y' / y; \text{ wherein}$$

$$y = v \cdot \Delta t \times n, \text{ and}$$

$$y' = v \cdot \Delta t' \times n;$$

wherein α represents the ratio, y represents a first scanning position of the exposure heads before the imaging timing is altered at an n -th update time, n being a natural number, and y' represents a scanning position of the imaging heads after the imaging time is altered at the n -th update time, where v is the scanning speed, Δt is a first update interval before altering the pixel update timing of the imaging heads, and $\Delta t'$ is a second update interval after altering the pixel update timing of the imaging heads.

23. (new): The imaging method of claim 22, wherein

$$\Delta t' = \alpha \cdot \Delta t; \text{ and}$$

the ratio α is in a range that is not less than 0.95 and not more than 1.05.

24. (new): The imaging method of claim 19, further comprising:
implementing an alteration of pixel update timing for the plurality of the individual
imaging heads simultaneously.

25. (new): The imaging method of claim 24, wherein the implementing the alteration
is implemented by retarding the pixel update timing by a duration Dt , where

$$Dt = Dy/v;$$

wherein Dt is the altered pixel update timing, Dy is a distance representing separation in
the scanning direction of a first exposure beam irradiated by the imaging head unit onto the
imaging surface and a second exposure beam irradiated by the imaging head unit onto the
imaging surface, and v is the scanning speed.